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EXAMINER

LEUNG, CHRISTINA Y

ART UNIT PAPER NUMBER

2633

DATE MAILED: 03/07/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/034,036

Applicant(s)

WARBRICK, KEVIN

Examiner

Christina Y. Leung

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 December 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16, 20-23 and 25-28 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-5, 13, 16, 20 and 22 is/are allowed.
- 6) ☒ Claim(s) 6-12, 14, 15, 21, 23 and 25-28 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 December 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Drawings

1. The drawings were received on 09 December 2005. These drawings are acceptable.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 14, 15, 21, 23, and 25-28 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

4. Claim 6 recites “the network control” in lines 11-12 of the claim, and claim 14 recites “the network control” in line 13 of the claim. There is insufficient antecedent basis for this limitation in the claim because the claims as currently amended do not recite “a network control.” (Examiner respectfully notes that the phrases have been deleted from the preambles of both claims in the current amendment). Claims 7-12, 15, and 23 are also rejected under 35 U.S.C. 112, first paragraph, for this reason because the claims depend on claims 6 and 14 respectively.

Furthermore, claims 7-9, 11, 12, and 15 also each recite “said network control” in the claim. There is insufficient antecedent basis for this limitation in the claims because their respective parent claims (claim 6 or claim 14) do not currently recite “a network control” as noted above.

5. Claim 14 recites “up stream of the first location” in lines 15-16 of the claim, and claim 21 similarly recites “up stream of the first location” in lines 16-17 of the claim. Based on

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Applicant's specification and claim 6, Examiner respectfully notes that "the first location" in claims 14 and 21 may be in reference to where the first recited monitor is located. However, there is currently insufficient antecedent basis for these limitations in the claims because unlike claim 6, claims 14 and 21 do not explicitly previously recite "a first location." Claims 15 and 25-28 are also rejected under 35 U.S.C. 112, first paragraph, for this reason because the claims depend on claims 14 and 21 respectively.

6. Claim 23 is also indefinite because it recites "the monitoring step" in line 1 of the claim, while parent claim 6 recites two separate monitoring steps; it is unclear to which monitoring step claim 23 refers.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 6-9, 12, 14, 15, 21, 25, and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sugawara (US 6,718,138 B1) in view of Shiragaki (US 5,457,556 A).

Regarding claim 6, as well as the claim may be understood with respect to 35 U.S.C. 112, discussed above, Sugawara discloses a method of monitoring degradation in the performance in an optical layer of a communications network prior to the performance in any higher layers of the communications network being substantially adversely affected, the method comprising the steps of:

monitoring at a first location, the optical performance of an optical signal transmitted within the optical layer of the network using a proxy to determine an optical performance characteristic which corresponds to the transmission quality of electronic signals extracted from the optical layer signal (column 13, lines 6-29; column 14, lines 27-42);

generating a first alarm in the event that the optical performance falls below a first predetermined optical performance level to alert the network control of the network that the first predetermined optical performance level has been exceeded (column 14, lines 5-16 and lines 27-42).

Similarly, regarding claim 14, as well as the claim may be understood with respect to 35 U.S.C. 112, discussed above, Sugawara discloses an apparatus for use in a communications network, arranged to monitor degradation in the performance in an optical layer of the communications network prior to the performance in any higher layers of the communications network being substantially adversely affected, the apparatus comprising:

a monitor (quality monitoring circuit 114) arranged to monitor the optical performance of an optical signal transmitted within the optical layer of the network using a proxy to determine an optical performance characteristic which corresponds to the transmission quality of electronic signals extracted from the optical layer signal (column 13, lines 6-29; column 14, lines 27-42);

an alarm generator (abnormality detector 115) arranged to generate a first alarm in the event that the optical performance falls below a first predetermined optical performance level to alert the network control of the network that the first predetermined optical performance level has been exceeded (column 14, lines 5-16 and lines 27-42).

Similarly, regarding claim 21, as well as the claim may be understood with respect to 35 U.S.C. 112, discussed above, Sugawara discloses a communications network in which the optical layer is provided with means to implement a method of indicating to network control when degradation in the performance in an optical layer of a communications network has occurred prior to the performance in any higher layers of the communications network being substantially adversely affected, the optical layer of the network comprising:

an optical performance monitor (quality monitoring circuit 114) arranged to monitor the optical performance of an optical signal transmitted within the optical layer of a network using a proxy to determine an optical performance characteristic which corresponds to the transmission quality of electronic signals extracted from the optical layer signal (column 13, lines 6-29; column 14, lines 27-42); and

an alarm generator (abnormality detector 115) arranged to generate a first alarm in the event that the optical performance falls below a first predetermined optical performance level to alert the network control of the network that the first predetermined optical performance level has been exceeded (column 14, lines 5-16 and lines 27-42).

Regarding claims 6, 14, and 21, Examiner notes that Sugawara discloses that the a proxy to determine an optical performance characteristic which corresponds to the transmission quality of electronic signals extracted from the optical layer signal is the monitoring of a Q value, for example (column 13, lines 15-18 and lines 25-29).

Further regarding claims 6, 14, and 21, Sugawara does not specifically disclose monitoring at a second location and comparing the performance at the first and second locations as recited in claim. However, Shiragaki teaches a system that is related to the one disclosed by

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Sugawara, including optical performance monitor 26 arranged to monitor the performance of an optical signal in an optical network, and further teaches monitoring the optical signal at a first location and at least a second location upstream of the first location (Figures 2 and 11). Although Shiragaki does not specifically describe fault detector 26 as having a “comparator,” Shiragaki clearly teaches monitoring optical performance information at a plurality of points and then determining the location of a fault based on which points have normal performance and which points do not (column 5, lines 50-62; column 6, line 67; column 7, lines 1-19). This determination of fault location as taught by Shiragaki inherently includes comparing information from the different monitoring points. Regarding claims 6, 14, and 21, it would have been obvious to a person of ordinary skill in the art to include monitoring at an additional location and comparing the results of monitoring at first and second locations as suggested by Shiragaki in the method and system disclosed by Sugawara in order to better determine the location of degradation or faults and thereby enable more efficient correction of problems in the network.

Regarding claims 7 and 8, Sugawara discloses that the network control comprises a network operator or an autonomous network controller (column 14, lines 9-16).

Regarding claim 9, as well as the claim may be understood with respect to 35 U.S.C. 112, discussed above, Sugawara discloses that the method further comprises the network control provisioning optical protection in the event the monitored optical performance falls below the first predetermined performance level (column 13, lines 18-23; column 14, lines 9-16).

Regarding claim 12, as well as the claim may be understood with respect to 35 U.S.C. 112, discussed above, Sugawara discloses that the method further comprises the network control provisioning optical protection in the event the monitored optical performance falls below the

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first predetermined performance level, wherein the optical protection provides local link protection (column 13, lines 18-23).

Regarding claim 15, Sugawara discloses provisioning means for the network control to provision optical protection in the event the monitored optical performance falls below the first predetermined performance level (using switch 103 as shown in Figure 10, for example; column 13, lines 18-23).

Regarding claims 25 and 26, Sugawara discloses provisioning of a protection channel and a roll-over of the optical signal to a protection channel (column 13, lines 18-23). Again, although Sugawara does not specifically disclose a comparison, Shiragaki teaches determining fault location based on a comparison of first and second monitoring points as discussed above.

Regarding claims 25 and 26, it would have been obvious to a person of ordinary skill in the art to include monitoring at an additional location and comparing the results of monitoring at first and second locations as suggested by Shiragaki in the system disclosed by Sugawara in order to better determine the location of degradation or faults and thereby enable more efficient correction of problems in the network by establishing protection channels specifically where they are needed.

9. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sugawara in view of Shiragaki as applied to claim 6 above, and further in view of Zhuo et al. (US 2003/0016410 A1).

Regarding claim 11, Sugawara in view of Shiragaki describe a method as discussed above with regard to claim 6, including the network control provisioning optical protection in the event the monitored optical performance falls below the first threshold level (column 13, lines

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18-23; column 14, lines 9-16). Sugawara does not specifically disclose that the optical protection provides end-to-end path protection.

However, Zhuo et al. teach a system that is related to the one described by Sugawara in view of Shiragaki including monitoring the performance of an optical signal in a network and provisioning optical protection in the event that the performance falls below a threshold level (pages 1-2, paragraph [0013]). Zhuo et al. further teach that the optical protection provides end-to-end path protection (page 2, paragraph [0016]). It would have been obvious to a person of ordinary skill in the art to provide end-to-end path protection as suggested by Zhuo et al. in the method described by Sugawara in view of Shiragaki in order to more effectively provide a protection path across a larger network having many interconnected nodes.

10. Claim 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sugawara in view of Shiragaki as applied to claim 6 above, and further in view of Nakajima et al. (US 6,522,803 B1).

Regarding claim 23, as well as the claim may be understood with respect to 35 U.S.C. 112, discussed above, Sugawara in view of Shiragaki describe a method as discussed above with regard to claim 6, including monitoring steps, but does not specifically disclose that monitoring is performed whenever a new channel is injected into the optical layer of the communications network. However, it is well understood in the art that the addition of new channels to an existing system has the potential to affect the performance of the channels, as Nakajima et al. particularly teach (column 1, lines 31-40). It would have been obvious to a person of ordinary skill in the art to perform monitoring as already described by Sugawara in view of Shiragaki whenever a new channel is injected in order to evaluate the effects of adding a new channel as

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suggested by Nakajima et al., and thereby ensure that the system responds to any performance changes as soon as possible.

11. Claims 27 and 28 rejected under 35 U.S.C. 103(a) as being unpatentable over Sugawara in view of Shiragaki as applied to claim 21 above, and further in view of Walsh (US 5,825,516 A).

Regarding claims 27 and 28, Sugawara in view of Shiragaki describe a system as discussed above with regard to claim 21. Sugawara discloses that the alarm signal (i.e., the abnormality detection signal) informs a supervisor of an abnormal situation, but Sugawara does not specifically disclose that the alarm is a visual or audio signal. However, it is well known in the art that alarms designed to alert a supervisor as already disclosed by Sugawara commonly comprise visual or audible alerts. In particular, Walsh teaches a system that is related to the one described by Sugawara in view of Shiragaki, including monitoring an optical communications system and providing an alarm signal in the event of an abnormal situation (Figure 3). Walsh further teaches that such an alarm may be a visual or audio alarm (column 8, lines 3-9). It would have been obvious to a person of ordinary skill in the art to specifically have a visual or audio alarm as suggested by Walsh as the alarm in the system described by Sugawara in view of Shiragaki in order to effectively attract the attention of a network operator as already disclosed.

Response to Arguments

12. Applicant's arguments filed on 09 December 2005 with respect to claims 6-9, 11, 12, 14, 15, 21, 23, and 25-28 have been considered but are moot in view of the new ground(s) of rejection.

Allowable Subject Matter

13. Claims 1-5, 13, 16, 20, and 22 are allowed.
14. Claim 10 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.
15. Reasons for the indication of allowable subject matter were given in the previous Office Action.

Conclusion

16. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.


17. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christina Y. Leung whose telephone number is 571-272-3023. The examiner can normally be reached on Monday to Friday, 6:30 to 3:00.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan can be reached on 571-272-3022. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 571-272-2600.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


CHRISTINA LEUNG
PRIMARY EXAMINER